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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,146	10/16/2003	Janne Jalkanen	042933/269523	8240

826 7590 08/01/2005

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EXAMINER	
YANG, CLARA I	
ART UNIT	**PAPER NUMBER**
2635	

DATE MAILED: 08/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/687,146	Applicant(s) JALKANEN ET AL.
	Examiner Clara Yang	Art Unit 2635

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed on 16 October 2003 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein (specifically FI 20030213) has not been considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 3-7, 14-19, 21, 22, and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landt (US 6,677,852) in view of Turner et al. (US 5,305,008).

Referring to claims 1 and 22, Landt teaches a mobile radio frequency identification device (RFID) reader 100 (i.e., an RFID reader associated with a mobile terminal), as shown in Figs. 1 and 3, having memory 310 for storing instructions, parameters, data, and at least an operations kernel, which form computer-readable program code portions as called for in claim 22, for processor 304 (see Col. 6, lines 51-67 and Col. 7, lines 1-12) that enable RFID reader 100 to perform the following functions: (a) using a motion sensor to determine RFID reader 100's situation/context (see Col. 6, lines 37-40); and (b) automatically enabling (i.e., adjusting the power consumption of RFID reader 100) based on RFID reader 100's motion sensor detecting movement after RFID reader 100 has been stationary (i.e., a previous context determination) (see Col. 6, lines 37-40). In other words, RFID reader 100's power consumption is adjusted by actuating the reader when motion is detected. Landt, though, is silent on adjusting RFID reader 100's power consumption by altering how often the reader is actuated.

In an analogous art, Turner teaches an RFID interrogator 1, see Figs. 1A, 9 and 16, having an adaptive control block (ACB) 54 that includes microcontroller 88 for: (a) detecting any responses from electronic labels within interrogator 1's communication range after an interrogation (see Col. 4, lines 9-11 and 47-49; Col. 6, lines 34-56; and Col. 14, lines 49-60); (b) determining a change by monitoring the presence of medium frequency components that occur when labels move rapidly within the field of the interrogator (see Col. 21, lines 37-42); and (c) adjusting the power consumption of the interrogator by reducing the duration of the low-power (V_L) period between high-power (V_P) periods when a label is detected to be moving quickly through the interrogator's field or by increasing the duration of the low-power (V_L) period between high-power (V_P) periods when no labels are detected or when a label is moving slowly through the interrogation field (see Col. 14, lines 60-67 and Col. 21, lines 42-51).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Landt's RFID reader 100 as taught by Turner because increasing RFID reader 100's power consumption by making high-power (V_P) periods sufficiently frequent when tags 102 are detected to be moving rapidly through the reader's interrogation field (or when the reader is moving rapidly among tags 102 that are within the reader's interrogation field) provides tags 102 at least one full period to generate its reply, thereby enabling data retrieval from even rapidly moving tags 102 while maintaining the average interrogator power within the limit set by statutory regulations (see Turner, Col. 14, lines 60-68; Col. 15, lines 1-8 and 11-15; and Col. 21, lines 42-51).

Regarding claims 3, 5, 24, and 26, Landt and Turner teach that RFID reader 100 is automatically enabled when motion is detected (see Landt, Col. 6, lines 37-40). In other words, when RFID reader 100 is stationary (i.e., no change in the reader's context), RFID reader 100 is disabled (i.e., the reader's power consumption is reduced), as called for in claims 3 and 24. However, once motion is detected, RFID reader 100 is automatically enabled (i.e., the reader's power consumption is increased), as called for in claims 3 and 24. When RFID reader 100 is disabled, it is understood that the reader ceases all interrogation. Consequently, as called for in claims 5 and 26, Landt and Turner's RFID reader 100 reduces power consumption by ceasing the interrogation of tags 102 until motion is detected.

Regarding claims 4 and 25, as mentioned in the previous rejection of claims 1 and 22, Landt's method, as modified by Turner, includes RFID reader 100 reducing its power consumption by increasing the duration of the low-power (V_L) period between high-power (V_P) periods when no labels are detected or when a label is moving slowly through the interrogation field (see Turner, Fig. 10; Col. 14, lines 60-67; and Col. 21, lines 42-51). Because the intervals

between high-power (V_P) periods are shortened only when medium frequency components are produced by a Doppler shift, which indicates the presence of a fast moving label within the interrogation field (see Turner, Col. 14, lines 60-68 and Col. 21, lines 37-51), the absence of medium frequency components indicates no change in the reader's context.

Regarding claims 6 and 27, as mentioned in the previous rejection of claims 1 and 22, Landt's method, as modified by Turner, includes RFID reader 100 increasing its power consumption by reducing the duration of the low-power (V_L) period between high-power (V_P) periods when a label is detected to be moving quickly through the interrogator's field (see Turner, Fig. 10; Col. 14, lines 60-67; and Col. 21, lines 42-51). Because the intervals between high-power (V_P) periods are shortened only when medium frequency components are produced by a Doppler shift, which indicates the presence of a fast moving label within the interrogation field (see Turner, Col. 14, lines 60-68 and Col. 21, lines 37-51), the presence of medium frequency components indicates a change in the reader's context.

Regarding claims 7 and 28, Landt and Turner's RFID reader 100 operates in a disabled mode when no motion is detected (see Landt, Col. 6, lines 37-40). Once RFID reader 100 is enabled (i.e., motion is detected), the reader operates in two other modes: (1) a low-power mode when tags 102 are outside of the interrogation field or moving slowly within the interrogation field (see Turner, Fig. 10; Col. 14, lines 60-67; and Col. 21, lines 42-51); and (2) a high-power mode when tags 102 are moving quickly within the interrogation field (see Turner, Fig. 10; Col. 14, lines 60-67; and Col. 21, lines 42-51).

Referring to claims 14 and 15, Landt's RFID reader 100, as shown in Fig. 3 and called for in claim 14, comprises: (a) an RFID section formed by antenna 114, transceiver 302, processor 304, and memory 310 (see Col. 6, lines 16-24 and 51-67; and Col. 7, lines 1-12 and 25-30); and (b)

processor 304 for determining RFID reader 100's context based upon information received from a distance or motion sensor (see Col. 6, lines 37-40). Landt's RFID reader 100, though, lacks at least one controller in communication with processor 304, wherein the controller adjusts the reader's power consumption based upon the reader's context by altering the reader's interrogation rate (as called for in claim 14). Consequently, Landt is also silent on processor 304 comprising the controller for adjusting the reader's power consumption (as called for in claim 15).

Turner's interrogator 1, as shown in Fig. 1A, includes an RFID reader formed by transmitter 2, antenna 3, receiver 12, decoder 13, and controller 14 (see Col. 6, lines 34-56 and Col. 7, lines 1-3). Per Turner, interrogator 1's ACB 54 (i.e., at least one processor) includes microcontroller 88 that examines the signals produced by converters 86 and 87 for evidence of medium frequency components, wherein the presence of the medium frequency components indicates that a label is moving rapidly through the interrogator's interrogation field (i.e., a change in the interrogator's context) (see Figs. 9 and 16; and Col. 21, lines 37-51). If such signals are found, microcontroller 88 causes baseband processor and controller (BPD) 48 to increase the occurrence of high-power (V_P) periods during a short period to ensure that at least one reply is received from the rapidly moving label (see Col. 21, lines 42-51), thereby adjusting the interrogator's power consumption. Because Turner's ACB 54 includes microcontroller 88 (as called for in claim 15), ACB 54 must be in communication with microcontroller 88 (as called for in claim 14).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Landt's RFID reader 100 as taught by Turner because increasing RFID reader 100's power consumption by making high-power (V_P) periods

sufficiently frequent when tags 102 are detected to be moving rapidly through the reader's interrogation field (or when the reader is moving rapidly among tags 102 that are within the reader's interrogation field) provides tags 102 at least one full period to generate its reply, thereby enabling data retrieval from even rapidly moving tags 102 while maintaining the average interrogator power within the limit set by statutory regulations (see Turner, Col. 14, lines 60-68; Col. 15, lines 1-8 and 11-15; and Col. 21, lines 42-51).

Regarding claims 16 and 17, Landt and Turner teach that RFID reader 100 has a distance (i.e., proximity) or motion sensor to provide RFID reader 100 with information regarding its environment (see Landt, Col. 6, lines 37-40; and Turner, Col. 21, lines 37-42).

Regarding claim 18, Landt's RFID reader 100, as modified by Turner, has BPD 48 for generating the transmitter envelope control (TEC) signal shown in Fig. 10 (see Turner, Col. 21, lines 21-25). BPD 48, which has a microprocessor 60, must have a timer for repeating the interrogation cycle at regular intervals T_R and for ensuring that the time period of a high-level signal T_H is long enough to allow a label to generate and transmit a reply (see Landt, Fig. 13; Col. 14, lines 60-68; Col. 15, lines 11-15; and Col. 21, lines 37-51). BPD 48's timer clearly tracks time between detections of a rapidly moving label (i.e., a change in context) since the intervals T_R are reduced when a tag is moving rapidly through the reader's interrogation field and then increased to its regular interval when no tags are detected or when a tag is moving slowly through the reader's interrogation field.

Regarding claim 19, Landt and Turner's RFID reader 100 includes switch 306, which is used to enable scanner 309 or initiate the interrogation of tags 102 (see Col. 9, lines 43-44). By enabling scanner 309, RFID reader 100's RFID reading section is disabled, thereby adjusting the RFID reading section's power consumption by changing its mode from enabled to disabled.

Regarding claim 21, as explained in the rejection of claim 14, Landt's RFID reader 100's RFID reading section comprises processor 304.

5. Claims 2, 20, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landt (US 6,677,852) in view of Turner et al. (US 5,305,008) as applied to claims 1, 14, and 22 above, and further in view of Davis (EP 0660624A1).

Regarding claims 2, 20, and 23, Landt's method, as modified by Turner, comprises: (a) RFID reader 100 reading/detecting any RFID tags 102 within the reader's interrogation field that responded to the reader's interrogation signal (see Landt, Col. 5, lines 41-43; Col. 6, lines 16-18; and Col. 7, lines 25-30), as called for in claims 2, 20, and 23; (b) RFID reader 100 determining from a distance or motion sensor that the reader is moving (i.e., determining whether a context of the reader has changed) (see Landt, Col. 6, lines 37-40), as called for in claims 2, 20, and 23; and (c) automatically enabling (i.e., adjusting the power consumption of RFID reader 100) based on RFID reader 100's motion sensor detecting movement after RFID reader 100 has been stationary (i.e., a previous context determination) (see Landt, Col. 6, lines 37-40), as called for in claim 20. Landt and Turner, however, are silent on determining whether RFID reader 100's context has changed by monitoring changes in the detection of RFID tags nearby relative to a prior interrogation, as called for in claims 2, 20, and 23.

In an analogous art (i.e., a prior art reference that is either in the field of applicant's endeavor or, if not, is reasonably pertinent to the particular problem with which the applicant was concerned), Davis teaches a combination selective call receiver (SCR) and cordless telephone transceiver 40 (i.e., hereinafter referred to as "mobile terminal 40"), as shown in Fig. 4, having SCR section 400 and cordless telephone section 410 (see Col. 7, lines 3-9). Because Davis teaches that SCR section 400 includes a radio frequency (RF) receiver 414 coupled to

antenna 412 for receiving RF location identifier signals transmitted by SCR system 10 (see Col. 5, lines 32-44 and Col. 7, lines 6-16), SCR section 400 is understood to be an RFID reader. Davis's mobile terminal 40 determines that its context has changed by monitoring changes in the detection of location identifier signals relative to a previously received location identifier signal, causing mobile terminal 40 to automatically transmit a location update signal to a call point transceiver 50 (see Fig. 6, steps 606, 612, 614, and 616; Col. 6, lines 1-3; and Col. 8, lines 1-14).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Landt and Turner's RFID reader 100 as suggested by Davis because determining whether RFID reader 100's context has changed by monitoring changes in the detection of RFID tags nearby relative to a prior interrogation enables RFID reader 100 to determine that it is moving without a distance or motion sensor, thereby simplifying RFID reader 100's circuitry.

6. Claims 8, 9, 11, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landt (US 6,677,852) in view of and Davis (EP 0660624A1).

Referring to claim 8, Landt's method comprises: (a) RFID reader 100 reading/detecting any RFID tags 102 within the reader's interrogation field that responded to the reader's interrogation signal (see Col. 5, lines 41-43; Col. 6, lines 16-18; and Col. 7, lines 25-30); (b) RFID reader 100 determining from a distance or motion sensor that the reader is moving (i.e., determining whether a context of the reader has changed) (see Col. 6, lines 37-40); and (c) RFID reader 100 becoming automatically enabled (i.e., adjusting its power consumption) based upon the determination that the reader is moving (see Col. 6, lines 37-40). Landt, however, is silent on

determining whether RFID reader 100's context has changed by monitoring changes in the detection of RFID tags nearby relative to a prior interrogation.

In an analogous art, as explained in the rejection of claims 2, 20, and 23, Davis teaches a mobile terminal 40, as shown in Fig. 4, having SCR section 400 and cordless telephone section 410 (see Col. 7, lines 3-9), wherein SCR section 400 is an RFID reader that reads RF identification signals (see Col. 5, lines 32-44 and Col. 7, lines 6-16). Davis's mobile terminal 40 determines that its context has changed by monitoring changes in the detection of location identifier signals relative to a previously received location identifier signal, causing mobile terminal 40 to automatically transmit a location update signal to a call point transceiver 50 (see Fig. 6, steps 606, 612, 614, and 616; Col. 6, lines 1-3; and Col. 8, lines 1-14).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Landt's RFID reader 100 as suggested by Davis because determining whether RFID reader 100's context has changed by monitoring changes in the detection of RFID tags nearby relative to a prior interrogation enables RFID reader 100 to determine that it is moving without a distance or motion sensor, thereby simplifying RFID reader 100's circuitry.

Regarding claims 9 and 11, Landt teaches the limitations called for in these claims as explained in the rejections of claim 3 (which is identical to claim 9) and claim 5 (which is identical to claim 11).

Regarding claim 13, Landt's RFID reader 100, as modified by Davis, operates in two modes: (1) an enabled mode (i.e., motion is detected) or (2) a disabled mode (i.e., motion is not detected) (see Landt, Col. 6, lines 37-40).

7. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Landt (US 6,677,852) in view of and Davis (EP 0660624A1) as applied to claim 9 above, and further in view of Turner et al. (US 5,305,008).

Regarding claims 10 and 12, Landt and Davis are silent on: (1) reducing RFID reader 100's power consumption by reducing the reader interrogation rate when there is no change in the reader's context (as called for in claim 10) or (2) increasing RFID reader 100's power consumption by increasing the reader interrogation rate when there is a change in the reader's context (as called for in claim 12).

In an analogous art, as explained above in the rejection of claims 1 and 22, Turner's method includes: (1) reducing interrogator 1's power consumption by increasing the duration of the low-power (V_L) period between high-power (V_P) periods when no labels are detected or when a label is moving slowly through the interrogation field, as called for in claim 10, and (2) increasing interrogator 1's power consumption by reducing the duration of the low-power (V_L) period between high-power (V_P) periods when a label is detected to be moving quickly through the interrogator's field, as called for in claim 12 (see Col. 14, lines 60-67 and Col. 21, lines 42-51). Because the intervals between high-power (V_P) are shortened only when medium frequency components are produced by a Doppler shift, which indicates the presence of a fast moving label within the interrogation field (see Turner, Col. 14, lines 60-68 and Col. 21, lines 37-51), the absence of medium frequency components indicates no change in the interrogator's context, and the presence of medium frequency components indicates a change in the interrogator's context.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Landt and Davis's RFID reader 100 as taught by Turner

because increasing RFID reader 100's power consumption by making high-power (V_P) periods sufficiently frequent when tags 102 are detected to be moving rapidly through the reader's interrogation field (or when the reader is moving rapidly among tags 102 that are within the reader's interrogation field) provides tags 102 at least one full period to generate its reply, thereby enabling data retrieval from even rapidly moving tags 102 while maintaining the average interrogator power within the limit set by statutory regulations (see Turner, Col. 14, lines 60-68; Col. 15, lines 1-8 and 11-15; and Col. 21, lines 42-51).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Bachhuber (US 5,623,257) teaches an RFID reader in a vehicle that adjusts its power consumption by operating a switch during a first waiting period with given intervals between actuation of the power supply and operating the switch during a second waiting period with intervals between actuation of the power supply that are longer than the given intervals of the first waiting period.

- DeZorzi (US 6,232,875) teaches an RFID tag in a tire that adjusts its power consumption by adjusting its transmission rate if motion is sensed and if a change in pressure is greater than a predetermined threshold.

- Saheki (US 2002/0075146) teaches an RFID tag in a tire that conserves battery power by transmitting a detected tire condition only when the detected current tire condition has changed from the previously transmitted tire condition by a predetermined value.

- Eagleson et al. (US 6,542,114) teach a mobile device that determines its context by reading beacon signals.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clara Yang whose telephone number is (571) 272-3062. The examiner can normally be reached on 8:30 AM - 7:00 PM, Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Horabik can be reached on (571) 272-3068. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CY
28 July 2005

Clara Yang
Clara Yang